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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,425	04/10/2006	Sebastien Prouet	FR 030121	3751
65913	7590	05/05/2008		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER POOS, JOHN W	
			ART UNIT 2816	PAPER NUMBER
			NOTIFICATION DATE 05/05/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/575,425	<b>Applicant(s)</b> PROUET ET AL.	
	<b>Examiner</b> JOHN W. POOS	<b>Art Unit</b> 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see Remarks/Arguments, filed 11 March 2008, with respect to the rejection of claim 1 based on Main et al. (US 5,497,123) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of Toyota et al. (US 5,963,064).

2. Applicant's arguments filed 11 March 2008, regarding the Drawing Objection of Figure 1 and the requirement of a Prior Art label, have been fully considered but they are not persuasive.

35 U.S.C. 372(a) states "All questions of substance and, within the scope of the requirements of the treaty and Regulations, procedure in **an international application designating the United States shall be determined as in the case of national applications regularly filed in the Patent and Trademark Office**", see WIPO document (WO/2005/036736) for United States designation.

As such, the requirement for a legend such as --Prior Art-- in instant Figure 1 is maintained, as set forth below.

### ***Drawings***

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted

by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Toyota et al. (US 5,963,064).

**In regard to Claim 1 (as taught in Figure 1):**

A transconductance circuit intended to convert a differential input voltage, supplied as two signals on two inputs (Inp, Inn), into a differential output current (Iop, Ion), characterized in that, where each of the two signals of said differential input voltage is supplied to each input through a follower transistor connected to said input by its emitter (Column 9: lines 35-38) and receives said signal on a control electrode (M1 and M2), each of the two inputs of the transconductance is connected to a respective current source (M3 and M4) that is dynamically controlled by the other input of the transconductance (102), said current source being such that the current supplied to each input by said current source eliminates current variations caused by voltage variations of the input voltage signal (the functionality does not distinguish the structure over the prior art).

**In regard to Claim 2 (as taught in Figure 1):**

A transconductance circuit as claimed in claim 1, wherein the transconductance circuit comprises two sides ((Inp, M1, Ion) and (Inn, M2, and Iop)), each side comprising an input (Inp and Inn), an output (Iop and Ion), at least a first transistor (M3) having a control electrode (M3 gate) coupled for receiving a bias voltage (Vcont), a first electrode connected to said output (M3 drain connected to Ion) and a second electrode connected to said input (M3 connected to Inp through M1), a second transistor (M4) having a first electrode (M4 source) and a control electrode (M4 gate) coupled in common to said input (connected to Inn through M2 and M5) and a second electrode connected to a power supply terminal (M4 drain connected to ground through 4Iss).

**In regard to Claim 3:**

A transconductance circuit as claimed in claim 2, wherein said first and second transistors are of the same size. (Column 5: lines 11-13)

**In regard to Claim 4 (as taught in Figure 1):**

A transconductance circuit as claimed in claim 2, wherein each side further includes a third transistor (M10) of the same size as said second transistor, said third transistor has a control electrode coupled to said first transistor (M10 gate connected through M10 drain) and control electrodes of said second transistor (M10 gate connected through M10 drain and M1), a first electrode connected to the output of the other side (M10 drain connected through M11 and M13) and a second electrode connected to said power supply terminal (M10 source connected to supply (slashed line connected to M10)).

**In regard to Claim 7:**

A chip intended to be implemented in a transceiver including at least a transconductance as claimed in claim 1. (Column 9: lines 43-46)

**In regard to Claim 8:**

A transceiver of radio-frequency signals including at least one chip as claimed in claim 7. (Column 9: lines 44-45)

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyota et al. (US 5,963,064) in view of Seevnick et al. (US 4,682,098).

**In regard to Claim 5:**

All of the claim limitations have been discussed with respect to Claims 1 and 2 above, except for wherein said current source includes a current mirror mirroring the current passing through said second transistor with a gain of two.

Seevnick (098) teaches wherein said current source includes a current mirror mirroring the current passing through said second transistor with a gain of two (Column 3: lines 5-7).

Therefore it would have been obvious to one skilled in the art at the time of the invention to use a current mirror with a gain of two in order to provide a voltage-current converter which has a linear voltage-current conversion over a relatively large frequency range (Seevnick Column 1: lines 58-61).

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyota et al (US 5,963,064) and Seevnick et al. (US 4,682,098) as applied to claim 5 above, and further in view of Hughes (US 4,973,857).

**In regard to Claim 6:**

All of the claim limitations have been discussed with respect to Claims 1, 2, and 5 above, except for wherein said current mirror includes a mirror transistor of twice the size of said second transistor, said mirror transistor having a control electrode connected to the first and control electrodes of said second transistor, a first electrode connected to the input of the other side and a second electrode connected to said power supply terminal.

Hughes (857) teaches wherein said current mirror includes a mirror transistor of twice the size of said second transistor (Column 2: lines 40-49), said mirror transistor having a control electrode connected to the first and control electrodes of said second transistor, a first electrode connected to the input of the other side and a second electrode connected to said power supply terminal (Figure 2: 32 (i.e. 36-1 and 34)).

Therefore it would have been obvious to one skilled in the art at the time of the invention to use a current mirror that is twice the size of the second transistor in order to avoid errors due to "end-effects" in different-sized transistors (Hughes Column 2: lines 50-52).

***Action is Non-final***

10. In view of the above-noted new grounds of rejection not necessitated by applicant, this office action is non-final.

***Communication***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN W. POOS whose telephone number is (571)270-5077. The examiner can normally be reached on M-F (alternating Fridays off), E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Richards, can be reached at 571-272-1736. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth B. Wells/  
Primary Examiner  
Art Unit 2816

/J. W. P./  
Examiner, Art Unit 2816